

Title (en)
Robot system having image processing function

Title (de)
Robotersystem mit Bilderverarbeitungsfunktion

Title (fr)
Système de robot avec fonction de traitement d'images

Publication
EP 1043642 B1 20080903 (EN)

Application
EP 00303008 A 20000410

Priority
JP 10189199 A 19990408

Abstract (en)
[origin: EP1043642A2] A robot system has an image processing function capable of detecting position and/or posture of individual workpieces randomly arranged in a pile to determine posture, or posture and position of a robot operation suitable for the detected position and/or posture of the workpiece. Reference models are created from two-dimensional images of a reference workpiece captured in a plurality of directions by a first visual sensor and stored. Also, the relative positions/postures of the first visual sensor with respect to the workpiece at the respective image capturing, and relative position/posture of a second visual sensor to be situated with respect to the workpiece are stored. Matching processing between an image of a pile of workpieces captured by the camera and the reference models are performed and an image of a workpiece matched with one reference model is selected. A three-dimensional position/posture of the workpiece is determined from the image of the selected workpiece, the selected reference model and position/posture information associated with the reference model. The position/posture of the second visual sensor to be situated for measurement is determined based on the determined position/posture of the workpiece and the stored relative position/posture of the second visual sensor, and precise position/posture of the workpiece is measured by the second visual sensor at the determined position/posture of the second visual sensor. A picking-up operation for picking out a respective workpiece from a randomly arranged pile can be performed by a robot, based on the measuring results of the second visual sensor. <IMAGE>

IPC 8 full level
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